

Background

Young children ages 3-7 spend 1400-1600 hours a year with screens, including television, tablets, phones, movies, and “related media” annually. Teachers know that screen-time in early childhood can curb creative play, stunt vocabulary and suppress the development of neural pathways. We see the distressing results in dull-eyed students who lack focus, shun self-regulation, resist reading and indulge in frequent “super hero play”.

As well, much of the time children spend with screens is: (1) sedentary, leading to obesity and under-utilized muscle groups, (2) passive, leading to ‘unconscious’ absorption of ideas and the inability to think about media or understand how it is affecting them, and (3) addictive, contributing to limited self-control, lack of interest in other activities, and sleep disorders

Research at the Harvard Graduate School of Education involving 100,000 children from 132 countries further demonstrates that students who cannot pay attention, communicate effectively with peers, or solve problems have an increased likelihood of failing school, becoming excessively violent, and falling into lifelong poverty.

Program Description

Screen Smart® is an accelerative, interdisciplinary learning program designed to close the achievement gap in early childhood classrooms. The data and outcomes included in this report detail the evidence-based means by which Screen Smart accelerates learning, and thus shrinks the achievement gap for underserved and at-risk children.

While engaging the whole body and mind of each child, the curriculum uses neuroscience-based cues to make screen engagement an active, intentional and intellectual process, thereby reversing the habits of sedentary and passive viewing and boosting educational outcomes, whether learning is in the classroom, or remotely. The program’s neuro-linguistic curriculum provides early childhood students with vital auditory, visual and kinesthetic stimulation while engaging them in close analysis of media texts.

Screen Smart teaches students the 21st century skill of being “screen smart” by:

- (1) elevating children’s energy and focus as a means of improving classroom learning and self-regulation,
- (2) including foundational literacy/narrative concepts & vocabulary in all lessons,
- (3) modeling extended response and intellectual rigor around media while creating the expectation that students pay close attention to detail and then discuss and write about what they watch.

Screen Smart’s educational outcomes are further enhanced by the program’s emphasis on having children apply their “screen smart skills” both in the classroom and at home, diminishing situational learning and contributing to increased parent involvement during screen time.

Outcomes Measured by ICMC

-Interest and student engagement. Recognized as vital for student learning, retention, and application of ideas to other classroom topics.

-Participation. Although teachers do not grade for participation, it is an essential part of the behavioral mortar that cements the bricks of learning. Early childhood experts including Bredekamp, Piaget, and Montessori emphasize the importance of student participation in effective early childhood teaching.

-Progress is charted in:

- Understanding and use of literacy-related vocabulary
- Use of complete sentences
- Understanding and use of basic literacy constructs
- Attention to/retention of detail **and** the ability to use those details to think about, analyze texts and infer meaning
- Discussion and writing about media texts
- Social-emotional learning and self-regulation

Program Reach

Fifteen Pre-Kindergarten (including two special needs classrooms), eleven Kindergarten, two First Grade, and two Second Grade classrooms participated in Screen Smart in five schools. Students received weekly instruction (30-45 minutes) once a week on site prior to Covid-19 related closures. Though remote sessions saw a reduction of participating classrooms and number of students, each school participated in remote Screen Smart sessions over Google Meets. One ICMC instructor worked with students in each classroom, both on-site and remotely.

Beethoven School: 9 session residency - 6 on site in 5 classrooms; 4 PreK (2 special needs), 1 Kindergarten classrooms. 70 students. 3 remote sessions for 2 PreK classrooms (including combined special needs classrooms) 10 students.

Crown Academy of Fine Arts School: 10-session residency - 7 on-site sessions in 5 classrooms: 2 Prek, 1 Kindergarten, 1 First grade, 1 Second grade classrooms. 98 students. 3 remote sessions for 2 classrooms; 1 PreK, 1 Second grade classrooms included 14 students.

Tonti School: 13-session residency - 9 on-site sessions in 10 classrooms; 4 PreK, 6 Kindergarten classrooms. 202 students. 4 remote sessions for 6 K classrooms included 42 students.

David School: 13 session residency - 8 on-site sessions in 6 classrooms; 4 PreK, 2 Kindergarten classrooms. 119 students. 5 remote sessions for 6 classrooms; 4 PreK, 2 Kindergarten classrooms included 56 students.

Kershaw School: 14-session residency - 5 classrooms; 2 PreK, 1 Kindergarten, 1 First grade, 1 Second grade classrooms. 10 sessions on-site included 115 students, 4 remote sessions for 5 classrooms; 2 PreK, 1 Kindergarten, 1 First grad, 1 Second grade included 40 students.

Curriculum Design & Customization

The interdisciplinary curriculum is designed to support a broad range of early childhood academic and developmental domains:

-Critical thinking:

Children state why they did or did not like visual texts seen in the classroom and/or at home. They are also asked to compare visual texts and contrast their differences.

-Meta-cognition:

Students are instructed to notice, then think and talk about what they are thinking and feeling.

-Inference:

Discussions during and after screenings continually challenge students to notice and reflect on ideas that they had inferred. E.G. How do we know that what we think about a specific detail in the story is true?

-Social-emotional learning:

Students relate self to text, text to world and participate in discussions evoking empathy for others. The curriculum incorporates social-emotional learning by focusing on identifying what the character feels, how students feel while watching, and how the film affects them.

-Literacy skills & vocabulary building:

Daily emphasis on narrative structure develops students' ability to discuss a story in terms of plot, character, setting, beginning/middle/end, main idea, theme, problem and solution, etc. Curriculum design for Screen Smart is closely aligned with ELA Common Core frameworks and CPS Scope & Sequence for each grade level.

-Reading Support:

- Students read, review, and identify letters and words appearing in the titles and credits of all films.
- First and Second grade students read the subtitles on subtitled films, individually and in small groups.
- Poems are read aloud by students individually, in small and large groups prior to viewing films based on those poems.
- Fundamental literacy frameworks and vocabulary are used in each session, including characters, plot, setting, fiction, and non-fiction.

-Math Learning:

Children use addition and math logic to count identifying objects, characters, and sound effects during the viewing of films. Students also identify multiple shapes (circles, squares, and octagons) during one of the films.

- Focusing and Self-Regulation:

Using short, high-energy movements led by instructors, teachers, and students, children practice focusing and learning to control their bodies.

-Fine Motor Skills:

The Screen Smart curriculum incorporates kinesthetic rubrics that support the development of fine motor skills in early childhood. According to the Journal of Developmental Psychology, mastery of hand gestures can enhance children's ability to follow verbal instructions.

-Speech Coaching:

Articulation/enunciation and focusing rubrics are given greater emphasis in classrooms with high numbers of ELL students. Students practice exercises focusing on strengthening consonants and are encouraged to use articulation and diction exercises when answering questions during class.

-Extended Response Inclusive of Individual Communication & Peer-to-Peer Dialog:

Throughout each session, scaffolding supports extended response and self-regulation. Students are led in discussions about character motivation, alternatives to character decisions, and the difference between reality and dream sequences in films.

Teacher Resources

By week 3, teachers at all schools received ICMC resources for teachers, including links to all films shown in Screen Smart, as well as videos with in-depth instructions for plosives and physical exercises. During remote learning, participating teachers received digital anchor charts for their class webpage, as well as parent resources; a co-viewing guide, and summer “funwork” with extended activities.

Quantified Outcomes

The outcomes cited below are based on 3rd party evaluation of the following assessment instruments and outcomes:

1. ICMC evaluator’s electronic outcomes documentation forms. Written teacher evaluations (pre-program, midpoint, and final)
2. One drawing exercise
3. One parent feedback document
4. Digital video documentation of classroom sessions

Inferential Reasoning & Higher Order Thinking

-At the beginning of the program, 72% of children across all grades (67% of Pre-Kindergarten, 63% of Kindergarten, 75% of First grade, and 69% of Second grade students) could answer *why* they thought or had inferred certain conclusions about the visual texts they watched, or *why* they had certain feelings about different parts of the story in the movie. By the conclusion of the program, 83% of students across all grades (84% of Pre-Kindergarten, 84% of Kindergarten students, 87% of First grade, and 80% of Second grade students) were able to provide reasons and support for what they thought was happening in a specific audio/visual text by utilizing complex thinking and application of information.

-At the beginning of the program, 63% of students were able to clearly communicate what they liked and did not like in a movie. By the end of the program, 80% of students were able to communicate, what they liked and did not like in a movie, using descriptors and details.

-On average, in each classroom session 76% of children in all four grade-levels were able to competently share *why* they liked and did not like certain parts of the movie.

During eleven of twelve instructional sessions, students were asked to share their opinions of media texts viewed at home. By the end of the program 68% of PreK, 81% of Kindergarten students, 90% of First grade, and 91% of Second grade students were able to characterize media texts as “fun, bad, sad, or scary” while providing details that substantiated their opinions. At the beginning of the program, only 66% of PreK, 76% of Kindergarten, 77% of First grade, and 89% of 2nd grade students could make such distinctions and verbalize them.

Self-to-text and text-to-world connections

In their pre-program evaluation surveys, teachers across all grades reported that an average of 44% of their students regularly made text-to-self connections in classroom discussions. By the end of the program, 76% of students were able to relate what they see in media texts to their own lives and talk about those connections.

Improved Verbal Communication Skills & Elevated Participation

-Over the course of the program, evaluators observed an increase in “focused student participation” to 91% in PreK classrooms, to 83% in Kindergarten classrooms, to 91% in First grade, and 87% in Second grade classrooms.

Vocabulary

-At the conclusion of the program, 86% of students across all grades (66% of PreK, 78% of Kindergarten students, 98% of First grade, and 90% of Second grade students) were able to define the fundamental vocabulary (character/plot/setting) of storytelling as well as recognize the words and respond with correct answers to questions about character/plot/setting in the movies they viewed.

Focusing and Self-Regulation Skills

-81% of students across all grade levels demonstrated the ability to use energy and concentration when engaged in screen use and other learning activities. In each session, students showed that they had mastered and could independently use the ICMC energy and concentration exercises to enhance their focus during screen time.

-By the 8th week of the program, teachers across all grade levels reported that 73% of students knew the ICMC energy/concentration rubric without prompting from an instructor.

-95% of students in all four grade-levels retained the concept that their minds need to be “awake” when viewing screens.

- For remote sessions, classes with eight or more students had an average focus of 70%, while groups of seven and under averaged 85% focus throughout the lesson.

Motor Skills

-90% of children over all grade levels demonstrated improved fine motor skills in hand movements (taught as part of supporting kinesthetic rubrics) by the 5th week of the program.

Extended Response

-80% of children in all grade levels participated in extended response discussions over the 12-weeks of the program.

Memorization

- 78% of Pre-Kindergarten students, 84% of Kindergarten students, 80% of First grade, and 92% of Second grade students memorized and repeated the first 2-4 lines of two separate poems that were the subjects of films in the program. This memorization was achieved within 10-15 minutes and retained through the conclusion of five subsequent weeks of the program.

Parent Feedback

-Outcomes from “funwork” completed by 10% of parents indicated that 82% of students across all grades engaged in the “energy and concentration” rubric before watching screens at home. One PreK teacher stated “Parents shared how they noticed while their children were watching television they could express their feelings or if they didn’t like it.” Another PreK teacher said “A few parents did mention that their child would question them about the setting and if they understood what was happening during a movie viewed at home.”

Select Teacher Feedback:

Focus and Self-Regulation

The remote sessions emphasized the importance of keeping the concentration focused on what was being viewed and keeping the mind awake to make sense of what was happening. The pause and asking questions while playing a video allowed students to take time to engage in discussions of what was being viewed. *Ms. Diyarza, K, Tonti School*

My diverse learners are interested in the program and it is allowing them to grasp the concept of story elements when we read books. They are always trying to do the gestures when we are reading books, too. *Ms. Magallanes, K, Tonti*

Improved Communication & Thinking Skills

Parents shared how they noticed while their children were watching television they could express their feelings or if they didn’t like it. *Ms. Wood, PK, Beethoven*

One of the best outcomes was observing the students learn to be able to understand what they are watching effects them and have the words to express their feelings out loud. *Ms. Dorman, 2nd grade, Crown Community of Fine Arts*

I like the collaboration that students display with their peers. I also like the fact that students can view different films and articulate what they viewed in their own words. *Ms. Thomas-Whaley, PK, Beethoven School*

Literacy, Vocabulary & Social Emotional Learning

The most important lesson to me was the social emotional learning, the children were able to recognize various emotions the characters demonstrated in the videos that were viewed. Children were able to connect with some of their feelings. This extended into our classroom during read aloud and dramatic play. Occasionally, you would hear children tell each other to use their "consecrations" to tell me what the setting or how the characters felt as I read a story. *Vallecillo, ELL PK Davis School*

I would like to say that this was a great learning experience for the kids and myself. The kids learned how to make connections with stories that were read to them and different movies that they have watched. *Ms. Ramadan, K, Tonti School*

Students are talking more about characters/setting and relating it to things they are watching at home. *Ms. Hogan, K, Tonti School*

When students discuss movies they have seen at home, we talk about how the movie made them feel. They are able to say if it was scary, sad, etc. They are thinking about characters and setting during read-alouds. *Ms. Hauch, PreK, Tonti School*

Remote Learning Feedback

After sessions, students were more alert and engaging, it also helped reinforce certain skills we were also working on--story comprehension, initial sounds of words. *Ms. Zamarron, PK, Crown School*

A couple of parents said to me that they know now what types of questions to ask their children when viewing shows or movies to help them understand what is happening on screen and to develop oral language and vocabulary. *Ms. Diyarza, K, Tonti School*